

OWENS (J. E.)

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ADDRESS IN SURGERY.

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This paper consists of a report of a series of cases of supra-pubic cystotomy and ununited fracture, and a short note on the operative management of carcinoma.

Several years ago it was predicted that supra-pubic lithotomy would supplant the lateral operation. That expectation has been realized. The few cases noted may serve to show the varied application of this operation.

Case 1. A. D. M., aged 48 years, came under my care November 2, 1890, with symptoms of stone in the bladder.

During the previous year he had been successfully treated for urethral stricture. The presence of a stone having been verified, the supra-pubic lithotomy was performed the day following his admission, and a stone of medium size removed. The upper extremity of the wound in the abdominal wall was closed, and a soft catheter was introduced into the bladder, fixed by a stitch to his skin, and allowed to remain for two or three days.

The contact of drainage tubes and catheter always occasions more or less discomfort, and should be removed as soon as their usefulness ceases to be apparent.

The skin around the supra-pubic opening was protected from contact with urine by means of a piece of protective or oiled skin, the under side of which was well coated with sim-



ple cerate containing iodoform, 10 per cent. An opening, a little larger than the supra-pubic wound, should be made in the protective, and the latter so shaped as not to be displaced by flexion of the thighs, and sufficiently large to cover the skin over a radius of about three inches from the wound.

An absorbent combination dressing, containing a slit for the catheter, was super-imposed on the protective. A light rubber tube, affixed to the distal end of the catheter and passing into a bottle resting by the side of the patient, conveyed the urine, for the most part, directly from the bladder to the bottle.

The dressing, as above described, completely prevents the urine from coming in contact with the skin.

The bladder was irrigated daily with warm boric acid solution, ten grains to the ounce, for a few days.

The patient recovered completely, without an untoward symptom, in five weeks.

Case 2. J. J. D., aged 56 years, was admitted to St. Luke's Hospital March 29, 1889.

A brother died of Bright's Disease. With the exception of two attacks of pneumonia, the patient considered himself a healthy man until 1882, when he began to have irritability of the bladder. All the symptoms of stone in the bladder supervened. The existence of the calculus was verified, and on April 3d lateral lithotomy was performed. The stone was phosphatic and somewhat above the medium size.

The patient was discharged on the 3d of May, apparently having made a good recovery.

Soon after leaving the hospital, however, haematuria supervened, and the patient again came under my care January 8, 1890. There was some smarting at the beginning of the flow of urine, but none during or after. The wound in the perineum was found completely healed, but the site of the incision was somewhat painful on pressure.

January 13th. The bladder was carefully examined, but no stone was found. Sometimes as much as a half-teacupful of blood escaped from the urethra. Tumor of the bladder was diagnosed, and, on the 24th of January, supra-pubic cystotomy was performed. The rectal bag was put into position and distended with twelve ounces of water. Six ounces of a solution of boric acid were thrown into the bladder through a silver catheter, which was allowed to remain. A longitudinal opening, three inches in length, was made through the linea alba, its lower extremity reaching to the pubic arch. The dissection having reached the bladder, two stout silk sutures were introduced through the whole thickness of its wall, parallel with and on each side of the middle line.

The free extremities of each suture were tied together. The upper wall of the bladder, considerably thickened, was elevated to the surface of the wound by making traction upon the two silk sutures above noted. The finger, introduced through the opening made between the sutures, came in contact with a papilloma, pyramidal in shape, situated on the right side and close by the neck of the bladder.

The growth was removed with the scissors and share spoon, and the cavity of the bladder irrigated with hot boric acid solution. A large drainage tube was retained in place by a stitch to the skin, and the wound in the abdominal wall shortened by suturing.

February 4th. The bladder wound having contracted to about the size of the drainage tube (5-16 of an inch in diameter), a smaller tube was substituted. February 6th. Drainage tube was removed. The bladder was washed every day with boric acid solution.

On the 14th of February the urine had ceased to flow through the supra-pubic wound. The patient has had no return of symptoms. At the time of the lateral lithotomy in the search, by means of the finger, for a second stone, the

tumor was not discovered, and as the occasional hemorrhage seemed to be no greater than might be expected to arise from the presence of a calculus, the existence of tumor did not suggest itself, so that I am unable to say whether the diagnosis could have been made at the time of the first operation or not.

Case 3. R. N. M., aged about 35 years, was admitted to the hospital on the 29th day of September, 1888, during the service of my colleague, Dr. L. L. McArthur, and was transferred at the expiration of his service.

The general health of the patient, previous to the present illness, was excellent.

Six months prior to admission he gave a history of a crushing injury of the pelvis, caused by his being caught between the side of a pit which he was digging and a falling boulder. He was taken home, and remained in bed from the time of his injury to his admission to the hospital, and was unable to walk during this time. Blood came from the external meatus, but he was unable to pass his urine; but the physician in attendance was able to draw the same by catheter. In a short time a perineal abscess was opened, and was discharging when he was admitted, at which time he was in the following condition: Thin, hectic, urine passing partly by the urethra and partly by the perineal fistula, great dysuria, severe cystitis.

Dr. McArthur enlarged the fistula by incision.

Exploration revealed a communication of the same with the rectum, and a fracture of the pubic ramus (vertical). An incision included the tissues intervening between the fistula and rectum. Farther examination showed a continuation of the tract into an abscess situated in the left ischiatic fossa and small pelvis. This was emptied and washed, when a communication was discovered between the inner wall of this abscess and an opening in the bladder at the site of the left prostatic lobe, the greater part of which seemed destroyed.

With an instrument in the bladder, the finger could feel the same as it entered the viscus at the internal end of the urethra. The entire inferior wall of the urethra was wanting in its membranous portion, the remainder of said portion forming a part of the wall of the pelvic abscess. A catheter was introduced through the proximal end of the urethra and drainage provided for the abscess.

During his stay in the hospital he was taken several times to the operating room for the purpose of introducing the catheter, which either had to be removed because of the cystitis, or had become accidentally displaced. When the catheter was in position, the urine freely escaped both through the instrument and the rupture.

When the catheter remained out for a few days, both orifices would narrow to such an extent that operative interference became necessary. Finally, at the last seance, the two openings in the bladder were made into one by cutting the intervening tissues. After that he improved greatly, but still suffered from the narrowing which always ensued if the openings were not well maintained patulous. The bladder was greatly contracted, and there was a band extending from the symphysis pubis backwards, constricting it like the groove in a horse-chestnut.

An important point was the direction which the urethra had assumed, as a result of the cicatricial contraction. This for the pendulous portion was normal; but when the sound reached the membranous part, the canal took an abrupt curve upwards behind the symphysis pubis, but at a distance of about two and one-half inches behind the same, inclining a little to the left. The normal urethral sound did not pass along the canal well for this reason. Attempts to close the perineal fistula failed.

17th of May, 1889. Patient was discharged some months ago, with a perineal fistula communicating with the bladder. The membranous and part of the spongy portion of the urethra

were destroyed, and the prostatic portion much damaged. He was instructed to pass a sound through the fistula into the bladder, systematically, to prevent cicatricial contraction. He failed to do this, however, and returned to the hospital with the fistula and prostatic portion of the urethra so much contracted that urine came through in drops only. There was great danger that the opening in the bladder would soon become so tight as to produce complete retention. Repeated efforts to pass instruments of different kinds into the bladder, through the fistula, failed. Finally, it was decided to enter the bladder by supra-pubic cystotomy, and make an effort to open the perineal fistula from the inside of the bladder; or, this failing, to construct a supra-pubic artificial urethra. The operation of supra-pubic cystotomy was made as follows:

Incision four inches long was made, extending upwards from the upper margin of the symphysis pubis in the middle line. The incision through the transversalis fascia did not measure over three inches in length. Some difficulty was experienced in finding the bladder, inasmuch as no sound could be passed into it from below, as it was very small and firmly held down by cicatricial tissue, in consequence of which, the rectal bag did not satisfactorily push the bladder forward, and the latter was by no means made prominent by the contained urine. The exploring needle was introduced into what appeared to be the bladder, and urine escaped. The viscus was then opened as near the symphysis pubis as possible. The incision was less than an inch long. A sound was then introduced through the supra-pubic opening, and by directing it into the perineal fistula, it was possible to cut down upon it at the site of prostatic urethra, and thus establish a channel for the urine. This being done, and the old fistula thoroughly dilated, a large cannula was introduced into the bladder through the fistula, and retained in place by bandages in the usual manner.

May 31st, there is the following record: "Quantity of urine passing through the supra-pubic wound has been daily diminishing, and to-day none has passed."

June 23d, the wound has perfectly healed.

Patient discharged July 31st. He was instructed to pass a No. 18 steel sound through the perineal opening into the bladder once a week, the balance of his life.

Case 4.—H. C., aged 28 years, Dec. 24th, 1890, sustained a fracture just above the junction of the rami of the ischium and pubis on the right side, and complete rupture of the urethra.

When admitted, patient was suffering great pain with some hemorrhage from the urethra. Parts were much distended from urinary infiltration and blood, which were evacuated by free incisions. These incisions did not, however, give satisfactory results, as the bladder soon became over distended. The patient being unable to pass the urine, the tenesmus being very urgent, and the passage of a catheter being impossible, supra-pubic cystotomy was performed, and free incisions made in the middle line just below the penis, and in the perineum, in order to empty the parts of accumulating blood and urine. In order to establish the continuity of the urethra, the catheter was introduced into the vesical end of the urethra through the bladder, by which we were able to locate the proximal torn end of the urethra which had been, by pressure, pushed aside from its normal position. The distal torn end was readily found by introducing a sound through the external meatus. We were thus enabled to place the catheter through the whole length of the urethra, with the view of establishing, by the healing process, the continuity of this canal.

Convalescence was tedious, in consequence of slow healing of the parts which had been so extensively undermined and separated by blood and urine. The undermining

even involved the mucous membrane of the bladder to some extent.

The patient was discharged 22d of March, 1891, with but little disability. The fracture was united, and he is now performing the duties of watchman.

Daily irrigations with hot boric acid solution were employed in the bladder and the abnormal cavities.

Early in February, orchitis supervened, and several small painful abscesses in the perineum and scrotal walls. The catheter was not used after March 7th. March 15th, we began the periodical introduction of sound. This the patient has been instructed to do for himself, once a week, for the balance of his life.

Case 5.—E. J. D., aged 38 years, was admitted to the hospital on the 29th day of July, 1890. In February of the same year, he had a severe attack of typhoid fever. During his convalescence, an abscess in the perineum opened spontaneously. Purulent urine had been discharging from the urethra. Later, another abscess formed in the perineum, and this, together with the other one, destroyed the lower segment of the urethra, leaving an opening two inches long.

November 1st., 1889, supra-pubic cystotomy was performed for the purpose of directing the urine away from the urethra, preparatory to an operation for its repair. The abdominal cavity was unintentionally opened during the supra-pubic operation.

The operation for the repair of the urethra failed; and, in a short time, emaciation, diarrhœa, and night-sweats having set in, the patient, under advice, left the hospital and has not since reported.

A few years ago, I began to advise patients, upon whom I had operated for the removal of cancer, to report to me every thirty days. By so doing, I hoped to be able to note the earliest evidence of recurrence and at once eradicate the

affected part. The following case illustrates the application of the method:—

Case 6. Mrs. S., aged 53 years, was affected with cancer of the left mammary gland, and in July, 1885, an eastern surgeon removed the whole organ. When sutures were removed, the patient discovered a hard lump, the size of a pea, at the site of the original tumor. There was also a small nodule left in the axilla. I first saw her in January, 1887, and in this same month, removed a cancerous tumor from the left mammary region, and a nodule from the axilla. October 7th, 1887, I removed another nodule from the axilla. February 16th, 1888, still another; December 8th, 1888, a nodule the size of a shot was removed; March 3d, 1889, still another nodule was extirpated; June 21st, 1890, removal of a cancerous growth from the axilla in intimate relation with the axillary vessels, and reaching to the clavicle.

Patient died, probably of brain cancer, the first part of this year, about five and a half years after the first operation.

Case 7. *Ununited Fracture.* A few years ago, in the case of a male thirty years of age, a fracture of the olecranon process which I had been treating, failed to unite. I cut down upon the bone, and freshened the bony surfaces with a thin chisel, and wired (No. 15 silver wire) the pieces together, using one suture. During the operation, a few drops of synovial fluid escaped. In due time there was a complete bony union. The patient, who was much addicted to sparring previous to the accident, did not cease to indulge in the manly art after the bone had become united.

Case 8. Miss M. B., aged twenty years, was injured July 13th, 1889. The right humerus was fractured in the lower third close to the elbow, and also near the shoulder joint, and the right radius, a short distance above the wrist.

On admission to the hospital, Nov. 29th, 1890,) the fracture of the lower third of the humerus was found ununited. The broken ends were exposed, the ends freshened

by means of saw, "chipped" with a chisel (as above described), drilled and wired together with No. 15 wire. The wound was closed without drainage, dressing applied, and the arm enclosed in plaster of Paris, from and including the hand, and reaching to a point well up over the shoulder. The arm was then placed next to the skin, forearm supported by sling; and a broad band encircled the body, holding the arm close to the chest. The clothing was allowed to fall down over all, the sleeves on that side not being used.

The bone was found firmly united at the end of two months, and the patient discharged February 25th, 1891.

She could not fully extend or flex the arm, but the range of movement will doubtless improve.

Case 9. A. I., aged fourteen years, was admitted on the 17th of April, 1890. About a month before, while out playing, he sustained a fracture of the left patella, the fragments of which were about an inch apart. A transverse incision opened the joint through the broken patella. The broken surfaces having been freshened with a sharp chisel, the fragments of the patella were drawn into apposition, and so maintained by means of two shotted silver wire sutures. The joint was irrigated with warm boric acid solution, and the bursa stitched with cat gut. A coil of cat gut was inserted for drainage, the wound closed, the whole leg enclosed in plaster of Paris, and suspended.

The patient left the hospital July 22nd, 1890. The union seemed strong and close, but an undoubted movement existed between the fragments.

Case 10. E. A. E., aged thirty-eight years, on June 25th, 1890, in jumping, fell, striking his knee against a piece of timber, producing a transverse fracture of the patella. The swelling was very marked, in consequence of an accumulation of blood in and about the joint. This patient was admitted on the 6th day of July, 1890.

The knee was still much enlarged, and an unhealed contused wound was situated over the lower edge of the kneecap.

About three weeks after the date of the accident, a crucial incision was made over the patella. The lacerated bursa had dipped down between the fragments, the joint was filled with fluid blood, and more or less decolorized fibrinous clots. These were removed and the joint well washed with warm boric acid solution, the broken surfaces freshened with a sharp chisel, and fixed in apposition with a single No. 15 silver wire. The wound having been closed and dressed, the whole leg was encased in plaster of Paris, and suspended.

July 23rd, and August 11th, the dressings were renewed. They were somewhat moist from a serous discharge.

August 18th, the wounds were healed, a lighter cast was applied, and the patient permitted to get up and use crutches. He left the hospital September 7th, 1890, and could bend his leg well, but not to a right angle. A good bony union was the result. He resumed work January, 1891.

So far as rapidity of union is concerned, after drilling, the following case is phenomenal:—

Case 11. Mrs. E. M., aged 60 years, received a fracture of both bones of the leg at the junction of the middle and lower thirds July 24th, 1890.

March 20th, 1891, evidences of a false joint in the broken tibia were manifest to all present. The broken surfaces were drilled and the leg encased in plaster of Paris, reaching above the knee.

April 11th, very little movement could be discovered, but the bones were again drilled and the leg placed in plaster of Paris reaching above the knee.

May 9th, the union was complete, but the leg was encased in plaster as far as the knee.

Case 12. R. A., aged 29 years, was injured July 4th, 1888. The injury consisted of a most extensive compound

comminuted fracture of the left tibia and fibula. The lacerations and contusions of the soft parts were very extensive; there was much undermining. The foot and leg, below the seat of the lesion, were cold and pale, and no pulsation could be made out in either the anterior or posterior tibial arteries. At the time, no operation was permitted.

Suppuration supervened; much sloughy tissue was removed from time to time, together with fragments of bone, and the latter became detached from their surroundings.

The case necessarily ran a very slow course, and after many weeks, (as might be expected), there was no union whatever, in either bone, nor had the wounds in the soft parts healed. I then made sufficiently free incisions transversely over the tibia, and longitudinally over the fibula, to make resections of the bones and to wire them together. Adding what had already been lost to what was removed in the resection, the bones were about three inches shortened. A section was removed from the fibula to allow the tibial surfaces to come together.

The patient remained about seven months in the hospital, and as the progress toward bony union seemed very uncertain, I drilled the tibia on several occasions, before and after he went home, where I continued in attendance till March 9th, 1889. I then wrote to parties interested in the case the following:

"The bones are in excellent position; they are firmly held so by a fibrous bond of union. There is no bony union, nor do I think that further treatment is likely to secure it."

I advised that a brace be made to support the leg at the seat of the injury, and that he begin to use the leg. The weight of the body, in pressing the bony surfaces together, may aid in "bony consolidation." I had not seen the patient after the brace was made until last Sunday (May 17, 1891), when I found a most excellent bony union, and the patient

much pleased with the result. He informed me that he resumed business as soon as the brace was ready for him; that he used the brace about seven months, when his limb was strong enough to discontinue the use of the former, but that he continued to wear a leather "legging" till about two months ago.

Case 13 was in some respects similar to the last one. O. S., aged 28 years, was admitted to the hospital July 30, 1888, with an ununited fracture of the tibia at its middle third, and wires loose in the bones. The accident occurred two years before. A few days after admission (August 4), the broken surfaces were freshened and fastened together by means of three bone pegs. The limb was encased in plaster of Paris till October 4. In the meantime one of the pegs had loosened and came away. The bones were somewhat more firmly united, but a false joint still remained.

October 15, 1888, a resection of tibia and fibula was performed, it being necessary to remove $1\frac{1}{4}$ inches of the fibula in order to bring into apposition the freshly cut surfaces of the tibia. Both bones were then secured with No. 15 silver wire, and the leg enveloped in plaster of Paris, reaching above the knee and including the foot. The leg was suspended. The patient was permitted to get up and use crutches the following January, and went home February 7, 1889, wearing a plaster of Paris splint, the leg being much improved, but not having firmly united.

April 30th, three months after leaving the hospital, Mr. S. wrote me that he could walk two or three blocks with one cane. He was still wearing the plaster of Paris. The following month the patient informed me that his leg had been examined by a competent surgeon, and that the union was found complete.

Case 14. C. Y., aged 41 years, was injured on the 21st day of July, 1890. He received a compound comminuted fracture of the right tibia at the junction of the

upper with the middle third, and a simple fracture of the fibula, four inches lower. We were informed that unusual hemorrhage and displacement existed; that, under influence of an anaesthetic, free incisions were made for exploration; that some loose fragments of bone and blood clots were removed; that the bones were placed in apposition without difficulty; that counter-puncture was made in posterior aspect of the calf, into which three or four drainage tubes were introduced; that the anterior wound was closed, that the leg was placed in a fracture-box, and that suppuration supervened. He was brought to Chicago and placed in St. Luke's Hospital October 19, 1890, the tibia being then ununited.

On close examination a superficial caries was found on the broken surfaces. These patches were scraped away with sharp spoon, after which the bony surfaces were smoothed off with a thin chisel, and "chipped" throughout the whole surface. This chipping consisted of cutting up small chips from the bone surfaces with light strokes of the hammer in such a manner as to leave each chip still attached by a portion of its edge. When the operation was completed the broken surfaces were half an inch apart.

The leg was then encased in plaster, including the foot, and reaching to the top of the lower third of the thigh. Much trouble was experienced in consequence of the old openings. For a considerable time they opened and closed alternately.

The progress of the case was very slow and tedious. I had many misgivings as to its outcome, but on February 19, 1891, I wrote to those interested in the case the following:

"In the case of C. Y., bony union of the tibia has finally been secured. A brace, containing well-upholstered leather to encircle the leg between knee and ankle, was ordered."

Summary: The dressing described in Case 1, answers well to keep the skin around the supra-pubic opening dry, and the patient clean. The recovery was complete in five weeks.

Case 2. The patient, after lateral lithotomy, had recovered in a month, and was then discharged, but was readmitted with haematuria, caused by a tumor, which was removed by the high operation. The urine ceased to flow through the wound at the end of three weeks.

In case 3, impassable traumatic, diffused stricture, following fracture of the pubes, and laceration of the urethra, furnished an indication for the operation.

In Case 4, the method was adopted for fractured pelvis, and complete division of the urethra. In the last case (No. 5) the high operation was a preliminary step in an attempted repair of a portion of the urethra, partially destroyed by perineal abscess following typhoid fever. In case 6, I hoped to prolong life after operation for cancer, by monthly examination of the patient, and by prompt removal of recurrent growths in their incipency.

Case 7 was a satisfactory result after wiring the olecranon process.

Case 8. Sixteen months after the accident, union was secured in two months (fractured humerus) by resection, "chipping" and wiring.

Case 9. After wiring the broken patella, with the shotted suture, movement between the fragments was easily made out a little over three months from the date of the operation. I have not had since then an opportunity of examining the patient.

In Case 10, the patella was broken June, 1890, blood clots removed from the joint and fragments approximated by a single wire, June 15, 1890; left the hospital September 7, 1890, with a good bony union; resumed work January, 1891.

Case 11 was one of rapid union of tibia after drilling, the fracture having occurred eight months before.

In case 12, bony union occurred after resection of tibia and fibula, wiring and drilling, with use of leg in about a year and three months from the date of injury.

In Case 13, bony union occurred in about two years and two months from the date of the accident, and in about ten months from the date of admission to the hospital, after the employment of bone pegs, resection of tibia and fibula, wiring, and use of the leg.

Case 14. Bony union was secured in an ununited fracture of the tibia in seven months after the accident, and four months after admission, by scraping, by smoothing with chisel, and by "chipping," the bony surfaces being half an inch apart when the leg was dressed. The fibula was not resected. By "chipping" as described in case 14, I hoped to create numerous irregular foci for the osteo-genetic process. These chips projecting from one bony surface, approximate, and in most cases, come in actual contact with those of the opposite surface. The reparative material will thus be increased and the chances of bony union, in difficult and uncertain cases, it is expected, would be materially improved.

